

STUDIES ON IDIOCERINAE LEAFHOPPERS: II. THE INDIAN AND PHILIPPINE SPECIES OF IDIOCERUS AND THE GENUS IDIOSCOPUS

(HOMOPTERA: CICADELLIDAE)

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Thanks to the courtesy of Dr. W. E. China, British Museum (Natural History), I was able to study specimens of most of the species of *Idiocerus* Lewis included by Distant (1908) in his work on the Cicadellidae of India. To Dr. J. P. Kramer, Entomology Research Division, U. S. Department of Agriculture, I am grateful for the loan of Baker's material of Philippine leafhoppers.

Distant's work includes: *Idiocerus nivosparsus* Lethierry, *I. fasciolatus* Distant, *I. atkinsoni* Lethierry, *I. clypealis* Lethierry, *I. scutellatus* Distant, *I. unimaculatus* Melichar, *I. subopacus* Motschulsky, and *I. astutus* Melichar. In the Annals and Magazine of Natural History (1912) he described *I. maculatus* also from India. Baker (1924) found this name preoccupied and changed it to *I. incertus*. Baker (1915) in his studies in Philippine Jassoidea, on page 338, established the genus *Idioscopus* and included in it *Idiocerus clypealis* and the two new species *Idioscopus tagalicus* and *I. palawensis*. He separated *Idioscopus* from *Idiocerus* on external morphological characters. The present study proves the correctness of placing *Idiocerus clypealis* in a separate genus. However, examination of the male genitalia of Baker's material shows that the other two species properly belong in a new genus herein described. I was not able to see specimens of *Idiocerus unimaculatus* and *I. subopacus*. All but one of the other Indian species of *Idiocerus* are herein transferred to *Idioscopus*. *Idiocerus astutus* is a species of *Balocha*.

***Balocha astuta* (Melichar) n. comb.**

Idiocerus astutus Melichar, 1903, Hom. Fauna Ceylon, p. 150.

Idiocerus astutus Melichar. Distant, 1908, Fauna British India, Rhynehota Vol. IV, Homoptera, p. 189.

Although I was able to see but one female specimen it is evident that this species is a *Balocha*. The forewing venation (fig. 2) is typical of this genus. This species seems closer to *Balocha pallida* Maldonado-Capriles described from West Pakistan. Melichar's description as quoted by Distant is quite complete and satisfactory so is quoted verbatim: "A small species; perfectly unicolorous, greenish-yellow, locally more pale green or yellow to rusty yellowish; eyes brown; face paler yellow, not marked; ocelli small vitreous; tegmina hyaline, slightly brownish-yellow with a weak golden shining lustre, veins delicate, not prominent, somewhat darker than the ground-colour, at tip of clavus a brown spot and the apical tip of tegmina with a piceous longitudinal spot; wings hyaline, vitreous; body beneath and legs pale yellow or greenish-yellow." Pedunculate cell as long as its peduncle.

Female genitalia: seventh sternum with posterior margin convex and slightly notched medianly, longer than remaining sterna together (fig. 1). Specimen from Nilgiri Hills, South India, T. V. Campbell collector, BM 1926-171.

Can be distinguished from the other five species so far included in *Balocha* by not having smoky forewing with broadly blackened median longitudinal vein, not being conspicuously banded with orange red or red, not having a round spot inside the pedunculate cell, being uniformly colored except for the brownish apical tinge of the forewing.

Idioscopus Baker, 1915

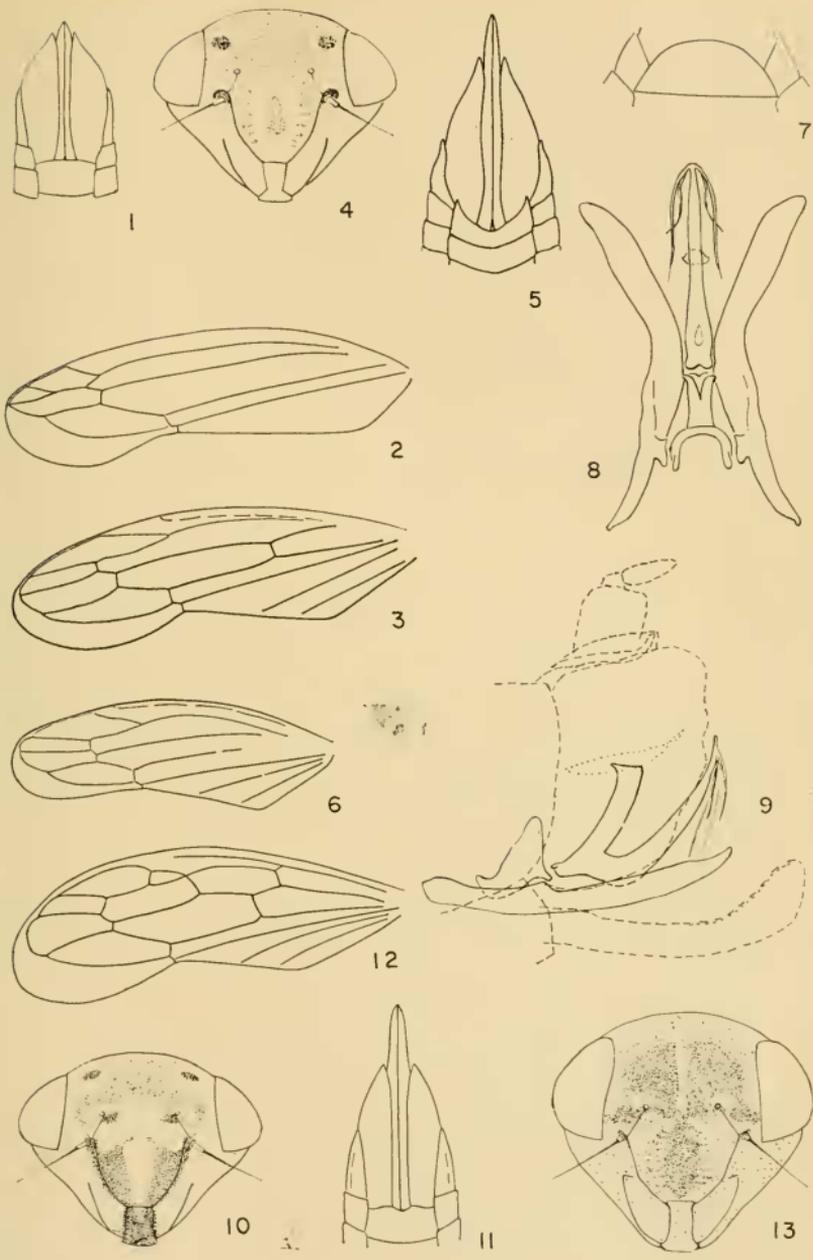
Idioscopus Baker, 1915, Philippine Jour. Sci. 10(6): 338.

Redescription of the genus: Relatively small species, up to 5 mm. in length. Vertex short, about one third as long as pronotum, finely or very finely transversely rugose or shagreened, anterior margin convexly round and parallel to posterior. Eyes close to hind margin of head. Head definitely wider than pronotum. Filament of antenna short, hair-like or slightly enlarged apically. Ocelli low on face, closer to eyes than to each other. Upper extremities of clypeus well developed in most species, reaching ocelli or just mesad of them. Clypellus longer than wide, sides slightly concave, usually wider apically than basally. Pronotum with anterior margin convexly round, sides short, shorter than scutellum. Scutellum triangular, wider or narrower than long, not swollen, medianly longer than head and pronotum together. Legs of moderate length; hind tibia strongly spinulose on posterior edges, other two edges setose. Forewing longer than abdomen in both sexes (venation as in figures 6 and 12) with four apical cells and one or no anteapical cell, usually no discal cell; costal margin of forewing convex, broad in some species; appendix relatively broad, reaching to second apical cell in most species.

External female genitalia: seventh sternum longer than sixth, slightly produced and concave medianly; valves as long or longer than abdominal sterna together, glabrous; ovipositor longer or slightly longer than valves, narrow, straight, glabrous.

Male genitalia: valves spatulate, upcurved on lateral aspect, at rest held almost vertical to long axis of body; upper margin on apical half with long hairs, hairs over one and one-half times depth of valve. Aedeagus with basal projection (apodeme) well developed, projecting upward, expanded laterally or not at apex; aedeagus elongate, curved, with four (two long and two short) apical filaments; gonopore opening subapically. Styles with anterior end flattened laterally, shorter than posterior end. Connective flattened laterally except at base and apically; slightly widened apically and broadly basally, inverted T-shaped on frontal aspect. Tenth tergum or base of anal tube detached, narrow, horse-shoe shaped, slightly expanded at tips. Pygofer short and deep, apically recurved mesad like a cupped hand, caudal margin wavy; a longitudinal unchitinized area near upper margin (see dotted outline on figure 20), apically with many very short setae.

Balocha astuta (Melichar), female. 1, seventh sternum and apex of abdomen, ventral; 2, forewing venation. *Idioscopus atkinsoni* (Lethierry), female. 3, forewing venation; 4, face, frontal view; 5, female tip of abdomen, ventral. *Idioscopus clypealis* (Lethierry), 6, male, forewing venation; 7, female, seventh sternum; 8, male, internal genitalia, caudal view; 9, male, concealed and external genitalia, lateral view. *Idioscopus fasciolatus* (Distant) female. 10, face, frontal view; 11, tip of abdomen, ventral. *Idioscopus incertus* (Baker), male. 12, forewing venation; 13, face, frontal view.



Type of genus: *Idiocerus clypealis* (Lethierry), established by Baker in 1915. Geographic distribution: Oriental.

The genus can be separated from other Idiocerinae genera as follows: scutellum and clypeus not swollen; upper extremities of clypeus well defined and reaching ocelli; four apical and usually one antepical cells; aedeagus long, upcurved, with four apical filaments, with basal apodeme well developed. Closer to *Paraidioscopus* gen. nov. than to any other idiocerine genus.

***Idioscopus atkinsoni* (Lethierry) n. comb.**

Idiocerus atkinsoni Lethierry, 1889, Jour. Asiatic Soc. Bengal 58, p. 252.

Idiocerus quinquepunctatus Melichar, 1903, Homoptera Faun. Ceylon, p. 146.

Female: Vertex relatively long, slightly less than one-half as long as pronotum, about one-fourth as long as wide; shagreened. Eyes extending well beyond lateral margins of pronotum. Upper lateral margins of clypeus well defined, reaching to ocelli; lateral margin of clypeus curved to clypellus. Clypellus, twice as long as wide, with a preapical transverse depression. Pronotum one-half as long as wide, posterior margin concave. Scutellum nearly twice as wide as long. Forewing venation as in figure 3; tip of ovipositor reaching to apex of second apical cell. Vertex infuscate except along posterior and lateral margins and medianly, with a basal median elongate small spot and two circular spots surrounded by yellow on anterior margin. Face (fig. 4) infuscate on both sides of median yellowish line; the two circular spots on vertex visible. Clypeus yellow with a small median black longitudinal line and with minute lateral fuscous striae. Pronotum yellow with fuscous disc, a narrow median brownish longitudinal line and two black spots near anterior margin. Scutellum with a triangular black spot near each basal angle and with a central narrow fuscous streak dilated anteriorly and posteriorly, a small fuscous spot on each side of its apical end. Forewing pale ochraceous, subhyaline; veins fuscous, well defined, costal margin yellowish; brownish areas at tip of clavus, at end of yellow costal margin, and apically. Legs and sterna yellow; ovipositor brown, pygofer brownish on lateral margins.

Female genitalia: seventh abdominal sternum deeply concave, caudal angles sharp; pygofer with inner margins wavy, a shallow depression midway near inner margin, as in figure 5. Drawings and description from specimens collected at Lyallpur, Punjab, West Pakistan, BM(NH) collection.

***Idioscopus clypealis* (Lethierry)**

Idiocerus clypealis Lethierry, 1889, Indian Mus. Notes 1(1):5.

Idiocerus nigroclypeatus Melichar, 1903, Homopt. Fauna Ceylon V(1).

Idiocerus clypealis Lethierry, Distant, 1908, Fauna British India, Vol. IV:187.

Idioscopus clypealis (Lethierry). Baker, 1915, Philippine Jour. Sci. 10(6):339.

Male: vertex short, about one-third as long as pronotum; finely transversely corrugated. Eyes extending well beyond lateral margin of pronotum. Face from crown to near ocelli very finely transversely corrugated, remaining portion of face shagreened. Upper extremities of clypeus directed to a point close and mesad to the ocellus on their respective sides, not to the opposite ocellus as in the species of some other genera in Idiocerinae; lateral margin of clypeus angularly bent near middle. Antennal flagellum as in some species of *Idiocerus*, slightly enlarged at tip. Lora reaching to about middle of lateral margins of

clypeus, slightly elevated. Head across eyes slightly wider than from crown to apex of clypeus. Pronotum almost three times as wide as long, hind margin broadly and shallowly concave. Scutellum slightly wider than long. Forewing without preapical cells, as in figure 6.

Head and pronotum flavescens; vertex with two black spots on anterior margin in most specimens (Baker points out that this is a male sexual character but in specimens from Lahore, West Pakistan, these are present in both sexes), face immaculate or with two small black spots at base of clypeus. Clypellus flavescens, black in the males from the Philippine Islands. Scutellum yellowish with a triangular blackish spot near each lateral angle. Forewing very pale ochraceous, translucent; veins inconspicuous, concolorous, except brownish apically; costal area yellowish to about middle. Body beneath and legs yellowish; a somewhat large black spot on each propleura; abdomen dorsally sooty-blackish; pygofer brownish medianly.

Male genitalia as in figures 8 and 9. Drawn from specimens collected by the author in Lahore, West Pakistan.

Female: coloration and dimensions as in the male except for the spots near ocelli that are missing in the females and the variable color of the clypellus. Seventh abdominal sternum brownish, shaped as in figure 7; ovipositor dark brown apically and light brown basally.

This species was seen by the author, in many Districts of West Pakistan, attacking mango trees in huge numbers. The Pakistani specimens at hand differ from others from Chikkahallapura in South India in having the clypellus pale instead of blackish as in the latter.

Idioscopus fasciolatus (Distant) n. comb.

Idiocerus fasciolatus Distant, 1908, Fauna of British India, Vol. IV: p. 186.

Distant's description is very clear so is quoted verbatim: "Vertex and pronotum grayish; vertex with two oblique central testaceous stripes and two black spots at anterior margin; pronotum with two curved discal testaceous stripes and four black spots, one near each lateral angle and two on anterior margin; scutellum suffused with pale testaceous, a black spot near each basal angle and two piecous spots on disk; head (figure 10) beneath pale ochraceous, a transverse testaceous fascia, which is deflected on each side, between eyes and beneath this fascia two black spots with pale centres, posterior margins of face and the clypeus black; body beneath and legs pale ochraceous; tegmina pale bronzy subhyaline, the veins fuscous, costal margin to near middle and a basal transverse fascia stramineous; near middle of costa is a linear black spot and a small spot of the same colour at apex; posterior costal area hyaline. In some specimens the vertex is without the testaceous stripes and black spots, both being replaced by a large but very obscure pale fuscous transverse spot. Length 4-4.5 mm."

External female genitalia as in figure 11. The drawing was made from a specimen from Myitta, India, from the BM(NH).

Idioscopus incertus (Baker) n. comb.

Idiocerus maculatus Distant, 1912, (nec Meichar 1896), Ann. Mag. Nat. Hist. vol. 8(10):605.

Idioscopus incertus Baker, 1924, Philippine Journ. Sci. 24:367, nom. nov.

Very close to *Idioscopus niveosparus*, perhaps only a subspecies or an extreme variety. As the genitalia show some differences they should be considered as two

species until breeding experiments are made to finally settle the point.

Male: vertex short, less than one-half as long as pronotum; finely transversely corrugate; anterior margin convex and parallel to posterior; eyes clearly extending beyond lateral margins of pronotum. Face finely transversely corrugate on upper half, shagreened on lower half. Upper extremities of clypeus well defined and reaching to ocelli; lateral margins of clypeus angularly bent near middle. Pronotum about one-third as long as wide, hind margin broadly and shallowly concave. Scutellum triangular, broader than long. Forewing venation as in figure 12. Vertex and pronotum ochraceous, the first with posterior and lateral margins yellowish, the latter irregularly spotted with brown, especially near anterior margin. Face (fig. 13), clypeus, and scutellum colored as in *I. niveosparsus*. Forewing bronzy subhyaline; veins brownish or ochraceous, conspicuous; costal margin pale brownish to about middle, following this an elongate costal brownish spot and a similar spot from before apex to base of appendix, between these a small ivory spot followed by a hyaline space; forewing ornamented with ivory white as follows: a broad band from humeral angle to inner angle of clavus, after the mid-costal brown spot, and with short dashes on each vein between the costal ivory spot and the apical angle of clavus. Male genitalia as in figures 14, 15, and 16.

***Idioscopus niveosparsus* (Lethierry) n. comb.**

Idiocerus niveosparsus Lethierry, 1889, Indian Mus. Notes I, 1:5.

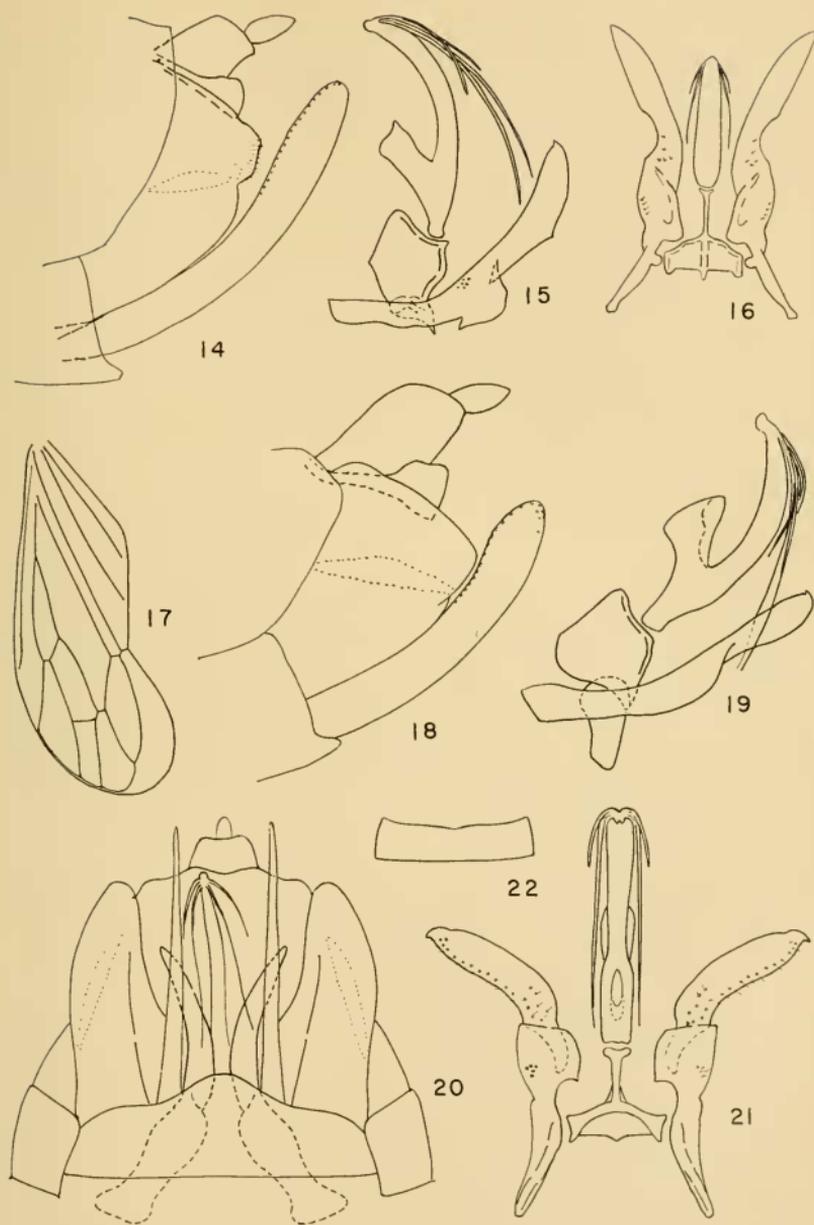
Idiocerus basilis Melichar, 1903, Homopt. Fauna Ceylon, p. 147.

Idiocerus niveosparsus Lethierry. Distant, 1908, Fauna British India IV: 185.

Chunra niveosparsa (Lethierry). Baker, 1915, Philippine Journ. Sc. 10(6): 324.

Male: vertex short, about one-fourth as long as pronotum, very finely transversely corrugated. Eyes clearly extending beyond lateral margins of pronotum. Face very finely corrugated on upper half, remaining portions shagreened. Clypeus with upper extremities reaching ocelli, lateral margins curved to base of clypellus. Clypellus with base two-thirds as wide as apex, slightly longer than apical width. Lora reaching to about middle of lateral margin of clypeus, slightly elevated. Head across eyes wider than from crown to apex of clypellus. Pronotum over two and one-half times as broad as long, hind margin concave. Scutellum two-thirds as long as broad. Forewing venation as in figure 17.

Vertex with brownish suffusions on each side of a central pale line, posterior margin and laterally before eyes yellowish. Face with two discal subsquare piceous-brown spots not reaching laterally to eyes. Ocellus inside a round yellow spot, another spot of the same size and color contiguous and laterad to first. Lateral margins of face orange-yellow. Clypeus with mesal elongate piceous-brown spot reaching from base to apex and with small lateral fuscous striae. Pronotum dull virescent with brownish and yellowish spots and markings irregularly distributed all over, paler near outer angles. Scutellum pale ochraceous with three basal blackish or dark brown spots, the central elongate or transverse and reaching to disc, the lateral spots triangular, behind the central two very small spots; area from mid lateral margin to apex ivory white. Sterna transversely spotted with black. Legs ochraceous, apex of posterior tibia black. Forewing bronzy subhyaline; veins ochraceous or brownish, conspicuous; costal area to about middle straw-colored, followed by an elongate costal brownish spot and a similar spot near apex, between these spots a hyaline space; forewing orna-



Idioscopus incertus 14, genital capsule, lateral; 15, concealed genitalia, caudal view; 16, concealed genitalia, lateral view. *Idioscopus nivosparsus* (Lethierry). 17, male, forewing venation; 18, genital capsule, lateral view; 19, concealed genitalia, lateral view; 20, tip of abdomen, ventral; 21, concealed genitalia, caudal view. *Idioscopus nivosparsus* female. 22, seventh sternum, ventral.

mented with white as follows: near humeral angle, basally on the three claval cells, with short dashes of white on each vein distributed in a nearly straight line from apex of clavus to base of hyaline costal spot.

Internal and external male genitalia as in figures 18 to 21. Described from material in the BM(NH), specimens collected in Calcutta, India, from Distant's collection, 1911; No. 383.

Female: similar in coloration and body proportions as male. Seventh abdominal sternum as in figure 22, very shallowly concave medianly and slightly produced on caudal angles. Drawn from specimens from the same locality as the males.

The Philippine Islands *I. nivosparsus* is definitely the same species as the Indian. I have not studied the male genitalia of Baker's varieties. The genitalia of *I. n. palawensis* are very close to the studied specimens from Calcutta. The small cell at the base of the outer apical cell, shown in all of Baker's drawings of the varieties from the Philippines, is absent in one of the two wings in some specimens from the Philippines and totally missing in some Indian specimens.

Idioscopus scutellatus (Distant) n. comb.

Idiocerus scutellatus Distant, 1908, Fauna British India, IV:187.

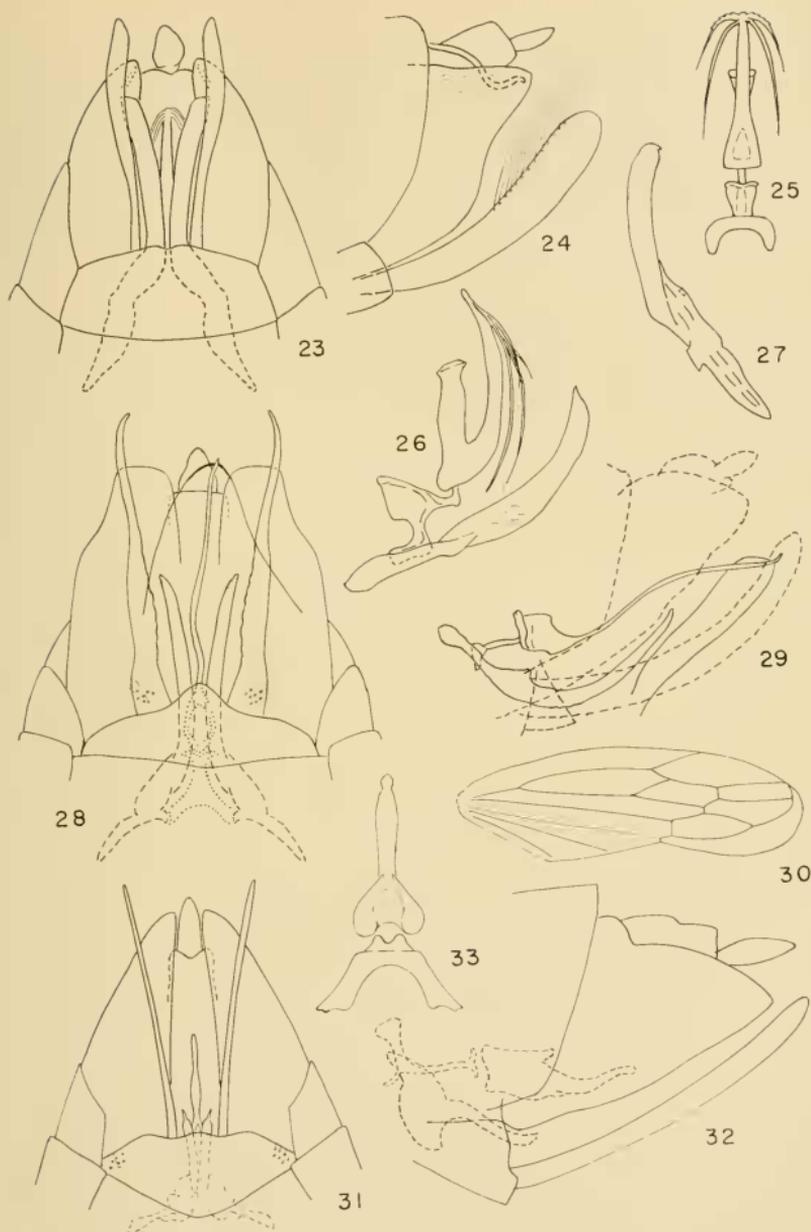
Male: vertex broad, about two-thirds as long as pronotum, shagreened. Eyes extending well beyond lateral margin of pronotum. Face shagreen; upper extremities of clypeus poorly defined, reaching ocelli; clypellus, because of position of its upper extremities, looks longer than in the other species, lateral margins arcuate. Clypellus elongate, wider apically than basally, sides slightly concave. Pronotum two and one-half times as broad as long, hind margin very shallowly concave. Scutellum equilateral.

Vertex, face, clypellus, pronotum, body beneath, and legs ochraceous. Clypellus black or with a median black spot. Scutellum ochraceous to tip of black spot on each lateral angle, apical half whitish. A black spot on each side of sternum between the anterior and intermediate coxae. Forewings pale bronzy, translucent; veins inconspicuous; costal margin yellowish-green, inwardly margined with brown.

External and internal male genitalia as in figures 23 to 27. Drawn from specimens from Calcutta, India. Distant (1908) on page 188 says "It remains to be proved whether it is only an extreme variety of that species (*I. clypealis*)."
Judging by the genitalia this is a different species.

KEY TO THE SPECIES OF IDIOSCOPUS TREATED IN THIS PAPER

1. Face and pronotum uniformly ochraceous, without black spots or black or brown irregular markings; clypellus black in some specimens..... **scutellatus** (Distant)
- Face and/or pronotum with spots or otherwise conspicuously marked with black or brown 2
2. Face with round black spots near upper margin 3
- Face irregularly marked with black or brown, spots not as above 5
3. Smaller species; face uniformly yellowish in males, with two smaller black dots near base of clypellus in females; pronotum unspotted **clypealis** (Lethierry)
- Larger species; face conspicuously spotted or infuscated with brown or black; pronotum with several dark markings..... 4



Idioscopus scutellatus (Distant), male. 23, tip of abdomen, ventral; 24, male, genital capsule, lateral view; 25, male, aedeagus and connective, caudal view; 26, concealed genitalia, lateral view; 27, male, style, dorsal view. *Paraidioscopus tagalicus* (Baker), male. 28, genital segments, ventral; 29, same, lateral; 30, fore-wing venation. *Paraidioscopus palawensis* (Baker), male. 31, genital segments, ventral; 32, same, lateral; 33, aedeagus and connective, ventral.

4. Clypeus with lateral margins yellowish; face infuscate on both sides of median yellowish line *atkinsoni* (Lethierry)
 Clypeus with lower lateral margins and contiguous areas in gena heavily infuscated; face with a transverse testaceous fascia which is deflected on each side *fasciolatus* (Distant)
5. Style with anterior portion longer than posterior; apodeme of aedeagus not keeled *incertus* (Baker)
 Style with anterior portion shorter than posterior; apodeme of aedeagus keeled *niveosparsus* (Lethierry)

Paraidioscopus gen. nov.

Type of genus *Idioscopus tagalicus* Baker 1915, USNM Type No. 66826.

Habitus very similar to the smaller species of *Idioscopus*. Relatively small species, up to 5 mm. in length. Vertex short, about one-third as long as pronotum; clearly transversely rugose; anterior margin convexly round, parallel to posterior. Eyes close to hind margin of head. Head definitely wider than pronotum. Filament of antenna hair-like. Ocelli low on face, closer to eyes than to each other. Upper extremities of clypeus straight, well defined, reaching ocelli; clypeus not swollen, lateral margin somewhat angularly bent near middle. Clypellus longer than wide, sides slightly concave, apically as wide as basally. Pronotum with anterior margin convexly round, sides short, shorter than scutellum, hind margin concave. Scutellum triangular, wider than long, not swollen, medianly longer than head and pronotum together. Legs of moderate length with posterior margins and upper anterior margins strongly spinulose, lower anterior margin setose. Forewing longer than abdomen in both sexes; venation as in figure 30, with four apical cells and one antepical cell, and with one or no discal cell; costal margin convex, narrow; appendix relatively narrow, reaching to third apical cell; outer apical cell the widest.

External female genitalia: seventh sternum longer medianly than sixth, rectangular; valve subequal in length to abdominal sterna together, glabrous, somewhat constricted subapically.

Male genitalia: valves spatulate, upcurved on lateral aspect, at rest held at about 45° to long axis of body; on apical half with long hairs on upper and lower margins. Aedeagus with basal apodeme well or poorly developed, aedeagus long or short, with or without apical filaments. Gonopore opening apically. Connective inverted V- or T-shaped on frontal aspect. Pygofer triangular on lateral aspect, produced caudad, finely scaly near caudal end. Styles relatively short, anterior end flattened laterally, shorter than posterior end.

The genus can be separated from other idiocerine genera as follows: scutellum and clypeus not swollen; upper extremities of clypeus well defined and reaching ocelli; four apical and one subapical cells; aedeagus variable, with or without apical filaments, basal apodeme short. Closer to *Idioscopus* Baker, but the male genitalia are quite different. Includes so far two species both from the Philippine Islands. As can be seen from figures 28 and 31 these two species may represent two genera. Externally the two species are very similar, but the internal genitalia suggest they may be generically distinct. Until more is known about this genus *I. tagalicus* and *I. palawensis* will be placed in *Paraidioscopus*.

Paraidioscopus tagalicus (Baker), n. comb.

Idioscopus tagalicus Baker, 1915, Philippine Journ. Sci. 10(6): 340.

Male: vertex about a third as long as pronotum, finely transversely corrugate. Face transversely corrugate almost to ocelli. Upper extremities of clypeus well defined, reaching inner margin of ocelli. Head from vertex to base of clypellus longer than wide to inner margins of eyes. Clypeus with lateral margins straight to apical two-thirds and thence angled mesad to base of clypellus. Clypellus nearly straight sided. Pronotum two and one-half times as wide as long, hind margin broadly and shallowly concave. Scutellum nearly two-thirds as long as wide. Forewing as in figure 30, costal margin narrow.

General color ochraceous. Vertex olive-tinted except along hind and lateral margins, spots on face narrowly visible on anterior margin. Face, clypeus, clypellus, and gena ochraceous; face near upper margin with two very conspicuous large spots. Pronotum olive-tinted except along anterior margin with or without two small spots near anterior margin. Scutellum yellowish with a large median basal spot, with or without two very small spots on basal angles. Forewing with clavus opaque yellow, translucent in some specimens (teneral?); corium faintly tinted with brown; the middle third of costa and a broad stripe adjoining elaval suture that reaches to mid length of clavus black or dark brown; very small brownish area at apex of wing; veins inconspicuous. Ventrally thorax and abdomen yellowish.

Male genitalia as in figures 28 and 29. Drawn from a specimen from Baguao, Benguet, P. I., coll. Baker.

Female: coloration and body proportions much as in the male. Clypellus and ovipositor blackish. Seventh abdominal sternum almost rectangular, slightly longer medianly than laterally; ovipositor reaching well beyond pygofers.

Paraidioscopus palawensis (Baker) n. comb.

Idioscopus palawensis Baker, 1915, Philippine Journ. Sci. 10(6): 338.

Baker's description is copied: "Length 4.25 mm.; width of head, 1.5 mm. Ochraceous, olive-tinted on vertex and pronotum; basal field of scutellum reddish brown; large basal lunulae on scutellum, small pronotal lunulae back of eyes, two spots on anterior margin of head, small dots inclosing ocelli, basal two-thirds of clypeus, spot on mesopleurae, and the ovipositor black; antennal scrobes darkened; tegmina golden brown, paler apically, the region of outer apical cell clearer; costa broadly, alternately yellow and brown to the outer cell.

Vertex, and face to just below upper black spots, finely, transversely striate, remainder shagreened; head wider than pronotum; length of vertex into width between eyes four and one-third times; length at middle nearly the same as at eyes. Face slightly longer than broad; distance between ocelli two and a half times the distance between ocelli and eyes and twice the width of clypeus at base; front slightly broader than long; clypeus of medium width, about as wide basally as apically, apex truncate; lorae much longer than clypeus and two thirds as broad. Width of pronotum two and a half times the length, the length slightly less than three times that of the vertex. Scutellum as long as pronotum and about one half of the vertex together; transverse impressed line obtuse-angularly bent, the apex open, the lateral limbs not arcuate; surface just posterior to impressed line with a few, shallow, transverse wrinkles. Tegmina distinctly thickened and roughened on basal half, this area having numerous strong punctures

along the veins. Hind margin of anal segment slightly produced medially. Palawan, Puerto Princesa, P. I. (coll. Baker)."

Male genitalia as in figures 31 to 33; seventh sternum longitudinally finely striate. The unique male at hand, apparently overlooked by Baker, has two spots each on vertex, pronotum, and scutellum as in the female. The clypeus is black on lower half whereas it is clear in the female, USNM Type No. 66827.

The two species in the genus can be easily separated as follows: *P. palawensis* with two black spots on scutellum anteriorly and *P. tagalicus* with a single large median black spot anteriorly on scutellum.

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PLATYPATROBUS LACUSTRIS DARLINGTON IN VERMONT

(COLEOPTERA: CARABIDAE)

Darlington (*Entomologica Americana*, 18: 135-183, 1938) founded the genus *Platypatrobis* on a single female specimen in the Museum of Comparative Zoology collection. It had been taken many years previously by Hubbard and Schwartz at Batchawaung Bay at the eastern end of Lake Superior. For 23 years it remained the only known specimen of the genus. Lindroth (*Psyche*, 69: 7-10) recently discovered a second, male specimen in the collection of the late C. A. Frost. It had been taken at a light trap in Sinclair in the northern tip of Maine. Lindroth described and figured the male genitalia, and discussed the taxonomic position of the genus. On July 28, 1963, we captured two more specimens, both females, near Stowe, Vermont. We were using a black light suspended in front of a sheet, facing westward on the western slopes of the Worcester range at an elevation of 1,450 feet. The locality is near Bedell Brook in the southwest corner of the Town of Elmore, about 5½ miles northeast of the village of Stowe. The beetles were collected within half an hour of one another, at 10:30 and 11:00 p.m., Eastern Daylight Saving Time. Both beetles appeared to be teneral, one more than the other. Both were covered with large numbers of mites. Despite extensive efforts, we were unable to find more specimens, either by light trapping or by collecting in nearby habitats.

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